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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/705,929	11/06/2000	Young-Sun Kim	P56228	7508

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EXAMINER

AWAD, AMR A

ART UNIT	PAPER NUMBER
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2675

DATE MAILED: 08/30/2004

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/705,929

Applicant(s)

KIM, YOUNG-SUN

Examiner

Amr Awad

Art Unit

2675

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 16 June 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,2 and 4-49 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 18-41 is/are allowed.
- 6) ☐ Claim(s) 42,43 and 47-49 is/are rejected.
- 7) ☐ Claim(s) 1-17 and 44-46 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: _____

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on June 16, 2004 has been entered.

Claim Objections

2. Claim 1 is objected to because of the following informalities: line 4 recites, "said color switching unit" which lacks antecedent basis. Examiner suggests that the limitation of "a color switching unit..." in lines 5-7 should precede the limitation of "first lens" . Appropriate correction is required.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 47-48 are rejected under 35 U.S.C. 102(b) as being anticipated Kunihiro (Japanese patent Publication NO. 10-198320).

Kunihiro teaches a display device that includes receiving image data and supplying the image data to a first display (1) arranging bits of the image data so that the image data is driven and displayed in order from most significant bit to least significant bit, and supplying the image data to a second display (2) arranging bits of the image data so that the image data is driven and displayed in order from least significant bit to most significant bit (abstract).

As to claim 48, the liquid crystal displays are either transmissive or reflective. Therefore, it is inherent that the LCD will be either transmissive or reflective.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 42-43 are rejected under 35 U.S.C. 103(a) as being unpatentable over Murakami et al. (US Patent NO. 6,191,826; hereinafter referred to as Murakami) in view of Kunihiro (Japanese patent Publication NO. 10-198320).

As to independent claim 42, Murakami (figure 3) teaches an image display system (projector apparatus) driven in a digital system that includes a controller (image signal processor) for receiving a plurality of colored signals (RGB signals from image

Art Unit: 2675

source 30), performing a predetermined signal processing, and outputting color data in accordance with the signal processing (col. 3, lines 23-34), an optical unit (optical system 10) receiving the outputted color data, outputting image data corresponding to the output color data to a screen (S) via a first light path (LB1 to LB4) (col. 3, lines 35-52).

Murakami does not teach having the first panel displaying the received color data starting from the most significant bit, and the second panel displaying the received data starting from the least significant bit to the most significant bit.

However, Kunihiro (figure 1) teaches a liquid display device that includes a first and second display panels (1 and 2) wherein one of the first or second panels receives the display data from the most significant bit and, the other panel receives the display data from the least significant bit (see English abstract, and paragraph 015 of the electronic English translation).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to include the teaching of Kunihiro having two display panels which receive data bits opposite to each other, to be included in Murakami's device so as motivated by Kunihiro, to be able to provide an LCD display which has no crossover wiring and applicable to chip-on-glass (see problem to be solved in the abstract).

As to claim 43, as can be seen in figure 3, Murakami shows a multiple light valves (LB1, LB2, LB3 & LB4), which been described as liquid crystal valves (i.e., display panels) (abstract). As can be seen also the display panels (LB1 through LB4)

Art Unit: 2675

receiving color data from the controller (image signal processor) each in accordance with synchronization signal (via synchronous circuit 3) (col. 3, lines 35-52). Murakami (figure 5) also shows that the light path for each panel is separately located (col. 4, lines 47-57).

7. Claim 49 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kunihiro in view of Hong (US patent NO. 5,706,063).

As can be seen above, Kunihiro shows all the limitations of claim 49 except the citation of splitting the light into first and second beams, and directing the first beam to the first display and the second beam to the second display, and then directing the light from the first and second display to be displayed on screen.

However, Hong (figure 2) teaches a display system that includes a splitter (32) for transmitting the light from light source (31) to first display (37) and second display (38) with S & P wave components, and to guide light received from the first and second displays to be displayed on screen S (col. 2, line 62 through col. 3, line 19).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to adapt the optical structure in Kunihiro's device so as motivated by Kunihiro, to improve the quality of the projected image by using two reflection LCDs (col. 1, lines 53-56).

Allowable Subject Matter

8. Claims 18-41 are allowed.

Art Unit: 2675

9. Claims 1-2 and 3-17 would be allowed if applicant overcomes the objection of claim 1.

10. Claims 44-46 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Response to Arguments

11. Applicant's arguments with respect to claims 42-43 and 47-49 have been considered but are moot in view of the new ground(s) of rejection.

It is noted by the examiner that Applicant (page 23 & page 28) the mirror image bit data disclosed by Kunihiro does not improve the brightness. Examiner respectfully disagrees because the claimed invention is calling for displaying data in sequence from most significant bit to least significant bit for the first light path and from the least significant bit to the most significant bit for the second light path (claim 42). Kunihiro recites, "reverse the display bit data of the second LCD 2 forward/backward in relation to display bit data of the first LCD 1" (abstract). This simply means that the order of the bits in the second display LCD 2 will be opposite to the order of the first display LCD 1, which means that if the data is displayed in the first display LCD 1 from the most significant bit to the least significant bit; the data would be displayed on the second display LCD 2 from the least significant bit to the most significant bit (i.e., reversed in relation to the bit data in the first display). Thus, examiner disagrees with the example

Art Unit: 2675

given by the applicant that the bit order "0111 1000" will take the order of "0001 1110" in Kunihiro's device, because only the data bits of the second display LCD 2 would be reversed.

Conclusion

12. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.


Kawabata et al. (US patent NO. 6,661,469) teaches false contour correcting apparatus and method.

13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Amr Awad whose telephone number is (703)308-8485. The examiner can normally be reached on Monday through Friday from 9:30 AM to 6:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Razavi can be reached on (703)305-4713. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Art Unit: 2675

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


8-25-2004
A.A